

ER PROGRAM DATA ASSESSMENT
SUMMARY REPORT FORM

Batch No. 8908L377 Site Groundwater Monitoring
Laboratory Roy F. Weston - Lionville No. of Samples/Matrix 6/Water
SOW # 10/86 (Rev. 2/88) Reviewer Org. TechLaw, Inc.
Sample Numbers G08870889002RE, G59860889002, G69860889002, GTB081089002, SW095005, SW094005

Data Assessment Summary

	VOA	Comments
1. Holding Times	<u>A</u>	<u>Action Item 1</u>
2. GC/MS Tune/Instr. Perf.	<u>X</u>	<u>Comment 1</u>
3. Calibrations	<u>A</u>	<u>Action Items 2,3; Comments 2,3</u>
4. Blanks	<u>A</u>	<u>Action Item 4</u>
5. Surrogates	<u>V</u>	
6. Matrix Spike/Dup.	<u>X</u>	<u>Comment 4</u>
7. Other QC	<u>X</u>	<u>Comment 5</u>
8. Internal Standards	<u>V</u>	
9. Compound Identification	<u>V</u>	
10. System Performance	<u>X</u>	<u>Comments 6,7</u>
11. Overall Assessment	<u>A</u>	<u>Data acceptable with qualifications.</u>

V = Data had no problems.

A = Data acceptable but qualified due to problems.

R = Data rejected.

X = Problems, but do not affect data.

Data Quality: Data contained in this batch were reviewed and found to be acceptable with qualifications. Acceptable.
qualified data may be used provided that individual values impacted by the "Action Items" listed below are appropriately flagged.
(Refer to attached Results Summary Tables.)

1 REVIEWED FOR CLASSIFICATION/UCRL
By [Signature]
Date 10/28/91

8L377/voa

A-DU04-000069

Action Items: 1) Non-detected results for aromatic compounds in all samples are estimated and undetected (UJ) because holding times exceeded seven days. In addition, all results in sample G08870889002RE are estimated (J or UJ) because the time from VTSR to analysis exceeded ten days.

2) 2-Butanone had RRFs below 0.05 in the 8/17/89 initial calibration and in the 8/22/89 and 8/23/89 continuing calibrations. As a result, the non-detect 2-Butanone results are rejected (R) in all samples.

3) Acetone had a %RSD greater than 30% in the initial calibration. Therefore all positive Acetone results are estimated (J).

4) As a result of blank contamination, the positive Methylene Chloride results in all samples are estimated and undetected (UJ) as per the Functional Guidelines criteria (5x and 10x rules).

Comments: 1) The 8/17/89 BFB tune did not meet the Ion Abundance criteria for m/z 176. Initial calibration data did not appear to be affected. In addition, the BFB tunes preceding the sample analyses met all criteria.

2) In the initial calibration Chloroethane's %RSD was greater than 30%. No action is taken as Chloroethane was undetected in all samples.

3) Several compounds had %Ds greater than 25% in the continuing calibrations. No action is taken as these compounds were undetected in all samples.

4) Three spike compounds had percent recoveries outside criteria in the matrix spike/matrix spike duplicate. No action is taken as data is not qualified solely on MS/MSD data.

5) The trip blank was contaminated with a high level of Acetone. This high level of Acetone in the samples and trip blank may be a reflection of the low RRF generated for Acetone.

6) All chromatograms exhibited a high baseline and the ions m/z 40 and m/z 44 are prevalent in all mass spectra. This does not appear to affect the data.

7) Results from the reanalysis of sample G08870889002 are reported rather than the results from the first analysis because the result for Acetone exceeded the calibration range in the original analysis.

Note: Data Summary Tables are attached.

Reviewer Signature

William T. Fies

Date

5/6/90

SITE NAME: Groundwater Monitoring

CLP VOLATILE ORGANIC ANALYSIS: Low Water

ANALYTICAL RESULTS (ppb)

Sample Location	VBLK047	G5966089002	G6966089002	GTB081089002	SW095005	SW094005	VBLK048	G08870889002RE
Sample Number		8/10/89	8/10/89	8/10/89	8/10/89	8/10/89		8/10/89
Sampling Date	Method Blank			Trip Blank			Method Blank	Reanalysis
Remarks								
Volatiles	CRQL	DQ	DQ	DQ	DQ	DQ	DQ	DQ
Compound	ug/L (ppb)							
Chloromethane	10	10 U V	10 U V	10 U V	10 U V	10 U V		10 UJ A
Bromomethane	10	10 U V	10 U V	10 U V	10 U V	10 U V		10 UJ A
Vinyl chloride	10	10 U V	10 U V	10 U V	10 U V	10 U V		10 UJ A
Chloroethane	10	10 U V	10 U V	10 U V	10 U V	10 U V		10 UJ A
Methylene chloride	5	5 UJ A	5 UJ A	5 UJ A	5 UJ A	5 UJ A	4 ppb	5 UJ A
Acetone	10	150 J A	83 J A	77 J A	80 J A	10 U V		120 J A
Carbon disulfide	5	5 U V	1 J A	5 U V	5 U V	5 U V		5 UJ A
1,1-Dichloroethene	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
1,1-Dichloroethane	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
1,2-Dichloroethene (Total)	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
Chloroform	5	5 U V	5 U V	5 U V	2 J A	2 J A		5 UJ A
1,2-Dichloroethane	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
2-Butanone	10	10 U R	10 U R	10 U R	10 U R	10 U R		10 U R
1,1,1-Trichloroethane	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
Carbon tetrachloride	5	5 U V	5 U V	5 U V	2 J A	2 J A		5 UJ A
Vinyl acetate	10	10 U V	10 U V	10 U V	10 U V	10 U V		10 UJ A
Bromodichloromethane	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
1,2-Dichloropropane	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
cis-1,3-Dichloropropene	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
Trichloroethene	5	5 U V	5 U V	5 U V	4 J A	4 J A		5 UJ A
Dibromochloromethane	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
1,1,2-Trichloroethane	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
Benzene	5	5 UJ A	5 UJ A	5 UJ A	5 UJ A	5 UJ A		5 UJ A
trans-1,3-Dichloropropene	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
Bromoform	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
4-Methyl-2-pentanone	10	10 U V	10 U V	10 U V	10 U V	10 U V		10 UJ A
2-Hexanone	10	10 U V	10 U V	10 U V	10 U V	10 U V		10 UJ A
Tetrachloroethene	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
1,1,2,2-Tetrachloroethane	5	5 U V	5 U V	5 U V	5 U V	5 U V		5 UJ A
Toluene	5	5 UJ A	5 UJ A	5 UJ A	5 UJ A	5 UJ A		5 UJ A
Chlorobenzene	5	5 UJ A	5 UJ A	5 UJ A	5 UJ A	5 UJ A		5 UJ A
Ethylbenzene	5	5 UJ A	5 UJ A	5 UJ A	5 UJ A	5 UJ A		5 UJ A
Styrene	5	5 UJ A	5 UJ A	5 UJ A	5 UJ A	5 UJ A		5 UJ A
Xylenes (Total)	5	5 UJ A	5 UJ A	5 UJ A	5 UJ A	5 UJ A		5 UJ A
Total Organic	4	150	84	77	88	8	4	120
Concentration (ppb)								

U Indicates the compound was not detected above the Required Quantitation Limit.

J Quantitation is approximate due to limitations identified during the quality control review.

E Exceeds calibration range, dilute & reanalyze.

CRQL Contract Required Quantitation Limit in Micrograms per Liter (ug/L), Parts per billion (ppb).

DQ Data Qualifier

V Valid

A Acceptable with qualifications

R Rejected

WILSONVILLE
STOCKTON

11/10/02

CW 0810 89001

Custody Transfer Record/Lab Work Request

WESTON Analytics Use Only

89081377

Client: Rockwell (Rocky Flats)

Work Order: 2029 33 04

Date Rec'd: 8-12-89 Date Due: 9-9-89

RFW Contact: Janell Bergman

Client Contact/Phone: (303) 980 6800



Refrigerator#	#/Type Container	Volume	Preservative	ANALYSES REQUESTED	Matrix	Date Collected	Client ID/Description
1	360 1/2 1/2 1/2	40 ml	—	1	W	8/10/89	608870889002
1	1	1	1	1	W	11	659860889002
1	1	1	1	1	W	11	669860889002
1	1	1	1	1	W	11	6769860889002
1	1	1	1	1	W	8/10/89	SW095005
1	1	1	1	1	W	8-10-89	SW097005
1	1	1	1	1	W	11	SW095005
1	1	1	1	1	W	11	SW094005

Matrix: W - Water DS - Drum Solids X - Other
S - Soil O - Oil DL - Drum Liquids
SE - Sediment A - Air F - Fish
SO - Solid WJ - Wipe L - EP/TCLP Leachate

Special Instructions:

1 = vcs 2 = bna 3 = pest/pcb 4 = cyanide
5 = filtered tcl metals Mo, Sr, Cs, Li, Sn
6 = unfiltered tcl metals Mo, Sr, Cs, Li, Sn

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
	J. Bergman	J. Bergman	8-11-89	1711					
	J. Bergman	J. Bergman	8/11/89	1700					
	J. Bergman	J. Bergman	8-12-89	9:30					
	J. Bergman	J. Bergman	8/14/89	10:00					
	J. Bergman	J. Bergman	8/22	8:00					
	J. Bergman	J. Bergman	8/27	5:00					

WESTON Analytics Use Only

Samples Were: 1 Shipped or Hand-Delivered

NOTES:

2 Ambient or Chilled

NOTES:

3 Received Broken/Leaking (Improperly Sealed)

NOTES:

4 Properly Preserved

NOTES:

5 Received Within Holding Times

NOTES:

COC Tape Was:

1 Present on Outer Package

2 Unbroken on Outer Package

3 Present on Sample

4 Unbroken on Sample

NOTES:

COC Record Was:

1 Present Upon Receipt of Samples

Discrepancies Between Sample Labels and COC Record?

NOTES:

RFW 21-21-001/A-12/88 * Trip Blanks Have Air Bubbles SW095-2150PC12
SW094-2200PC12
SW097-275PC12

ER PROGRAM DATA ASSESSMENT
SUMMARY REPORT FORM

Batch No. 8908L377 Site Site Background Characterization
Laboratory Roy F. Weston No. of Samples/Matrix 5/Water
SOW # 7/87 Reviewer Org. TechLaw, Inc.
Sample Numbers G69860889002, SW095005 (total), SW094005 (total), SW095005 (soluble), SW094005 (soluble)

Data Assessment Summary

	ICP	AA	Hg	CN	Comments
1. Holding Times	<u>V</u>	<u>V</u>	<u>V</u>	<u>A</u>	<u>Action Item 1</u>
2. Calibrations	<u>A</u>	<u>V</u>	<u>V</u>	<u>V</u>	<u>Action Items 2-3</u>
3. Blanks	<u>A</u>	<u>A</u>	<u>V</u>	<u>V</u>	<u>Action Items 4-10</u>
4. ICP Interference Check Sample	<u>A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>Action Item 11</u>
5. Lab Control Sample Results	<u>V</u>	<u>V</u>	<u>V</u>	<u>V</u>	
6. Duplicate Sample Results	<u>V</u>	<u>V</u>	<u>V</u>	<u>V</u>	
7. Matrix Spike Sample Results	<u>V</u>	<u>A</u>	<u>V</u>	<u>V</u>	<u>Action Items 12-13</u>
8. Method of Standard Addition	<u>N/A</u>	<u>V</u>	<u>N/A</u>	<u>N/A</u>	
9. Serial Dilution	<u>V</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	
10. Sample Verification	<u>V</u>	<u>V</u>	<u>V</u>	<u>V</u>	
11. Other QC	<u>V</u>	<u>V</u>	<u>V</u>	<u>V</u>	
12. Overall Assessment	<u>A</u>	<u>A</u>	<u>V</u>	<u>A</u>	<u>Data valid, or acceptable with qualifications</u>

V = Data had no problems.

A = Data acceptable but qualified due to problems.

R = Data rejected.

X = Problems, but do not affect data.

N/A = Not applicable.

Data Quality: Data contained in this batch were reviewed and found to be valid, or acceptable with qualifications. Acceptable, qualified data may be used provided that individual values impacted by the "Action Items" listed below are appropriately flagged. (Refer to attached Results Summary Tables).

Action Items: 1) The Cyanide values for SW095005 (total) and SW094005 (total) are estimated and undetected (UJ) because holding times were not met.

2) All Zinc values are estimated (J) because the CRDL check sample recovery criteria were not met.

3) The Lithium value for G69860889002 is estimated and undetected (UJ) because the CRDL check sample recovery criteria were not met.

4) All Antimony and Copper values are estimated and undetected (UJ) because analyte values >IDL were found in the blanks.

5) The Thallium values for G69860889002 and SW095005 (soluble) are estimated and undetected (UJ) because Thallium values >IDL were found in the blanks.

6) The Lead values for SW095005 (total and soluble) and SW094005 (total and soluble) are estimated and undetected (UJ) because Lead values >IDL were found in the blanks.

7) The Arsenic value for SW094005 (total) is estimated and undetected (UJ) because Arsenic values >IDL were found in the blanks.

8) The Arsenic values for G69860889002, SW095005 (total and soluble), and SW094005 (soluble) are rejected (R) because of negative bias indicated in the blanks.

9) All Aluminum values except SW094005 (total) are estimated and undetected (UJ) because Aluminum values >IDL were found in the blanks.

10) The Iron values for G69860889002, SW095005 (total), and SW094005 (total) are estimated and undetected (UJ) because Iron values >IDL were found in the blanks.

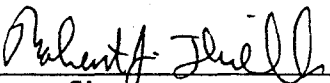
11) All Beryllium and Manganese values except G69860889002 are estimated (J) because of Calcium interference indicated in the ICP interference check sample.

12) The Lead value for G69860889002 is estimated (J) because the pre-digestion matrix spike recovery criteria were not met.

13) The Thallium values for SW094005 (total and soluble) and SW095005 (total) are estimated and undetected (UJ) because the pre-digestion matrix spike recovery criteria were not met.

Comments: None

Note: Data Summary Tables are attached.


Reviewer Signature

3/28/90
Date

SITE NAME: Site Background Characterization

CLP WATER INORGANIC ANALYSIS: Low Water

ANALYTICAL RESULTS (ug/L)

Sample Location	G69860869002		SW095005		SW095005		SW094005		SW094005			
Sample Number	8/11/89		8/10/89		8/10/89		8/10/89		8/10/89			
Sample Date												
Remarks			Total		Soluble		Total		Soluble			
Inorganic Analyte	DL ug/L		DQ		DQ		DQ		DQ			
Aluminum	Al	200	117 UJ	A	238 UJ	A	224 UJ	A	280	V	205 UJ	A
Antimony	Sb	60	31.3 UJ	A	34.2 UJ	A	29.9 UJ	A	41.3 UJ	A	42.7 UJ	A
Arsenic	As	10	0.8 U	R	0.8 U	R	0.8 U	R	0.9 UJ	A	0.8 U	R
Barium	Ba	200	72.6	V	174	V	185	V	182	V	187	V
Beryllium	Be	5	0.6 U	V	0.8 J	A	0.5 J	A	0.6 J	A	0.5 J	A
Cadmium	Cd	5	4.5 U	V	4.5 U	V	4.5 U	V	4.5 U	V	4.5 U	V
Calcium	Ca	5000	141000	V	348000	V	373000	V	368000	V	368000	V
Cesium	Cs	1000	100 U	V	100 U	V	100 U	V	100 U	V	100 U	V
Chromium	Cr	10	5.3 U	V	5.3 U	V	5.3 U	V	5.3 U	V	5.3 U	V
Cobalt	Co	50	4.2 U	V	4.2 U	V	4.2 U	V	4.2 U	V	4.2 U	V
Copper	Cu	25	12.7 UJ	A	18.5 UJ	A	20.9 UJ	A	22.2 UJ	A	21.3 UJ	A
Iron	Fe	100	50.4 UJ	A	87.4	V	77.3 UJ	A	128	V	75.3 UJ	A
Lead	Pb	5	11.0 J	A	1.8 UJ	A	1.5 UJ	A	1.8 UJ	A	1.4 UJ	A
Lithium	Li	100	100 UJ	A	410	V	436	V	422	V	447	V
Magnesium	Mg	5000	39700	V	90800	V	96300	V	94900	V	96900	V
Manganese	Mn	15	9.6	V	14.6 J	A	14.6 J	A	15.6 J	A	13.8 J	A
Mercury	Hg	0.2	0.2 U	V	0.38	V	0.2 U	V	0.2	V	0.2 U	V
Molybdenum	Mo	200	100 U	V	100 U	V	100 U	V	100 U	V	100 U	V
Nickel	Ni	40	9.0 U	V	11.1	V	11.8	V	11.1	V	9.0 U	V
Potassium	K	5000	540 U	V	75700	V	76800	V	76900	V	78300	V
Selenium	Se	5	154	V	14.4	V	17.0	V	11.8	V	15.2	V
Silver	Ag	10	6.2 U	V	6.2 U	V	6.2 U	V	6.2 U	V	6.2 U	V
Sodium	Na	5000	138000 J	A	466000 J	A	478000 J	A	478000 J	A	491000 J	A
Strontium	Sr	200	1030	V	2670	V	2830	V	2790	V	2850	V
Thallium	Tl	10	3.3 UJ	A	1.9 UJ	A	1.9 UJ	A	1.9 UJ	A	1.9 UJ	A
Tin	Sn	200	100 U	V	100 U	V	100 U	V	100 U	V	100 U	V
Vanadium	V	50	8.1 U	V	8.1 U	V	8.1 U	V	8.1 U	V	8.1 U	V
Zinc	Zn	20	49.8 J	A	43.0 J	AA	46.1 J	A	40.2 J	A	35.0 J	A
Cyanide		10	108	V	10.0 UJ	A	N/R		10.0 UJ	A	N/R	

E Estimated by the Laboratory

U Indicates the compound was not detected above the Instrument Quantization Limit

J Quantitation is approximate due to limitations identified during the quality control review

DL Detection Limit in Micrograms per Liter (ug/L)

NR Not reported

DQ Data Qualifier

V Valid

A Acceptable with qualifications

R Rejected

L377Ueg03j

510CKTON
89081377

06110
COW 081089001

Custody Transfer Record/Lab Work Request



Client: Rockwell (Rocky Flats)
Work Order: 2029 33 04
Date Rec'd: 8-12-89 Date Due: 9-9-89
RFW Contact: Janelle Bergman
Client Contact/Phone: (303) 980 6800

Refrigerator#	#/Type Container	Volume	Preservative	ANALYSES REQUESTED	Matrix	Date Collected	Client ID/Description
1	260 1/2 gal	1 gal	NaOH	1	W	8/10/89	908870889002
2	40 ml 1/2 L	1 L			W	"	959860889002
3					W	"	969860889002
4					W	"	9713081089002
5					W	8/10/89	969860889002
6					W	8-10-89	SW095005
7					W	"	SW097005
8					W	"	SW095005
9					W	"	SW094005

* Please note Samples are radiometric all except 085

Special Instructions:

1 - vcs 2 - bna 3 - pest/pcb 4 - cyanide
5 - filtered tcl metals Mo, Sr, Ca, Li, Sn
6 - unfiltered tcl metals Mo, Sr, Ca, Li, Sn

Matrix: W - Water DS - Drum Solids X - Other
S - Soil O - Oil DL - Drum Liquids
SE - Sediment A - Air F - Fish
SO - Solid WI - Wipe L - EP/TCLP Leachate

Item/Reason	Relinquished by	Received by	Date	Time	Item/Reason	Relinquished by	Received by	Date	Time
SW095005	J. V. Bergman	J. V. Bergman	8-11-89	1711	SW094005	J. V. Bergman	J. V. Bergman	8-11-89	0830
SW097005	J. V. Bergman	J. V. Bergman	8-11-89	1700	SW095005	J. V. Bergman	J. V. Bergman	8-11-89	1200
SW098005	J. V. Bergman	J. V. Bergman	8-12-89	9:30					
SW099005	J. V. Bergman	J. V. Bergman	8-14-89	10:00					
SW100005	J. V. Bergman	J. V. Bergman	8-22-89	8:00					
SW101005	J. V. Bergman	J. V. Bergman	8-22-89	5:00					

RFW 21-21-001/A-12/88

* Trip Blanks Have Air Bubbles
SW095-2150PC19
SW094-2200PC19
SW097-275PC19

WESTON Analytics Use Only

1 Samples Weigh: Y
2 Shipped or Hand-Delivered: Y
NOTES: 2 Ambient or Chilled

3 Received Broken/Leaking (Improperly Sealed): Y
NOTES: SEE SIDE

4 Properly Preserved: Y
NOTES: SEE SIDE

5 Received Within Holding Times: Y
NOTES: SEE SIDE

COC Tape Was: Y
1 Present on Outer Package: Y
2 Unbroken on Outer Package: Y
3 Present on Sample: Y
4 Unbroken on Sample: Y
NOTES: SEE SIDE

COC Record Was: Y
1 Present Upon Receipt of Samples: Y
Discrepancies Between Sample Labels and COC Record? Y
NOTES: SEE SIDE

SW095-2150PC19
SW094-2200PC19
SW097-275PC19